REMARKS

This submission accompanies a Request for Continued Examination filed concurrently herewith. Claims 35-45 have been amended. Claims 46-71 are new. Claims 1-34 were previously canceled. Claims 35-71 are pending in the present application. Applicants reserve the right to pursue the original claims and other claims in this and other applications.

At the outset, the present application and U.S. Patent No. 6,136,689 (Farrar) were, at the time the present invention was made, subject to an obligation of assignment to the same entity: Micron Technology, Inc. The assignment for this application was recorded in the PTO on February 2, 2001, on Reel 011512, Frame 0608. The Assignee of Farrar is shown on the face of the reference. Therefore, 35 US.C. § 103(c) applies.

Claim 35 and 36 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,136,689 (Farrar) or U.S. Patent No. 5,269,838 (Knight et al.). Applicants respectfully traverse this rejection.

Claim 35, as amended, recites a method of depositing solder material comprising the steps of "introducing a first solder component into at least a first solder conduit of a print head, wherein said first solder conduit has first and second openings; and pressurizing gas in a chamber of said print head which is in fluid communication with at least said first opening, wherein said first solder component introduced in said first solder conduit is not introduced into said chamber, said pressurized gas flowing to said first solder conduit and causing said first solder component to be ejected. . . thereby depositing said first solder component on a connection site on a receiving element."

Farrar relates to a "method of forming micro solder balls for use in a C4 process." (Abstract). Farrar discloses that "solder balls are formed by laying down a peel-away photoresist layer, forming holes in the photoresist layer to expose electrical contacts, depositing a solder layer over the photoresist, forming solder areas in the holes and then,

using a tape liftoff process to remove the solder layer and photoresist layer while leaving solder areas in holes." (Abstract). According to Farrar, the "solder areas are then heated to allow solder balls to form." (Abstract).

Farrar fails to disclose deposition of a solder component by pressurizing gas in a chamber altogether, much less on having a chamber "wherein said first solder component introduced in said first solder conduit is not introduced into said chamber" as recited in the claimed invention. The method of depositing the solder material of Farrar is not described at all. In Farrar, the deposition of the solder material is incidental to the tape liftoff process of forming the solder ball contacts. As such, Farrar does not disclose all the limitations of amended claim 35.

Knight et al. relates to a "method and apparatus for constructing, repairing and operating modular electronic systems" using "half-capacitors . . . to communicate non-conductively between abutting modules." (Abstract). While Knight et al. discloses that dies may be "bumped by bonding to each pad several layers of protective metallization followed by a 10-200 micron diameter solder ball" (col. 3, lines 8-10), an object of Knight et al. is to provide "an MCM wherein modules are attached to a substrate without use of solder or wire-bonding" (col. 9, lines 57-60); (emphasis added). Knight et al. is entirely silent on "introducing a first solder component into at least a first solder conduit. . . ; and pressurizing gas in a chamber . . . thereby depositing said first solder component on a connection site," as recited in the claimed invention. According to Knight et al., the "performance improvement achievable with solder-bumped and wire-bonded dies is fundamentally limited by the excessive series inductance of the solder bump or wire-bonded interconnection." (Col. 6, lines 60-63). Knight et al. too fails to disclose any of the limitations of amended claim 35.

Since neither Farrar nor Knight et al. disclose all the limitations of claim 35, claim 35 and dependant claim 36 are patentable over both references. Applicants

respectfully request that the 35 U.S.C. § 102(e) rejection of claims 35 and 36 be withdrawn.

Claims 37-39 and 43-45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Farrar or Knight et al., in combination with U.S. Patent No. 5,377,902 (Hayes) and U.S. Patent No. 5,681,757 (Hayes). Applicants respectfully traverse this rejection.

Knight et al. is an improper reference for use in rejecting claims under 35 U.S.C. § 103(a) because it teaches against solder or wire bonding. As discussed above, Knight et al. discloses a method for fabricating "an MCM wherein modules are attached to a substrate without use of solder." Therefore, Knight et al. not only fails to teach or suggest the claimed method, it actually teaches away from the claimed method by teaching away from the use of solder connections.

As mentioned above, the subject matter of Farrar and the claimed invention were, at the time the invention was made, subject to an obligation of assignment to the same entity: Micron Technology, Inc. Therefore, 35 US.C. § 103(c) applies. As a result, the Examiner's rejection of claims 37-39 and 43-45 based on the combination of Farrar in view of other prior art cannot be sustained and should be withdrawn.

Claims 37-39 and 43-45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hayes '902, U.S. Patent No. 5,229,016 (Hayes et al.), Hieber 4,828,886, or Hayes et al. (MicroFab Technologies) in combination with Farrar (6,136,689) or Knight et al. (5,629,838).

As mentioned above, Knight et al. is an improper reference for use in rejecting claims under 35 U.S.C. § 103(a) because it teaches away from the claimed method. Furthermore, the Examiner's use of Farrar is not permitted to preclude patentability under 35 U.S.C § 103(a) as provided by 35 U.S.C. § 103(c). As a result, the Examiner's

rejection of claims 37-39 and 43-45 based on the combination of Farrar in view of other prior art cannot be sustained and should be withdrawn.

Claims 40-42 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Farrar in combination with Hayes '902 and Hayes '757 or Hayes '902, Hayes et al. '016, Hieber or MicroFab Technologies in combination with Farrar or Knight et al. Applicants respectfully traverse this rejection.

For at least the same reasoning set forth above regarding the use of Knight et al. and Farrar as prior art, neither Knight et al. nor Farrar are proper references for use in precluding patentability of the claimed invention. As a result, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of claims 40-42 be withdrawn.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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Respectfully submitted,

By_____

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